Yon Visell

Haptics, Robotics, Human-Computer Interaction, VR

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Education

2011	**PhD Electrical and Computer Engineering**	**McGill University**
1999	**MA Physics**	**The University of Texas, Austin**
1995	**BA Physics**	**Wesleyan University**

Experience

2015–Present	**Assistant Professor** Media Arts and Technology Graduate Program Department of Electrical and Computer Engineering Department of Mechanical Engineering (affiliate) California NanoSystems Institute	University of California, Santa Barbara
2013–2015	**Assistant Professor** Department of Electrical and Computer Engineering	Drexel University
2011–2012	**Postdoctoral Researcher** Institute of Intelligent Systems & Robotics	Université Pierre et Marie Curie - Paris 6
2006–2011	**Research Fellow** Interaction Design Program	Zurich University of the Arts
2004–2006	**Interactive Art + Technology** Large scale artistic installations	FoAM (Belgium), Zero-Th (Croatia)
1999–2004	**Industrial Research and Development** Sonar, Speech recognition, Audio DSP	Ableton, Loquendo (Nuance), ARL (Austin) Interaction Design Institute Ivrea

Research Highlights

Author of 50+ articles in journals, conferences, and books in science and engineering, and two haptic technology patents.
Awarded more than $2M in research funding, including more than $1.15M as PI.
h-index: 16 (Google Scholar). More than 500 citations since 2010.
Published in: Proceedings of the National Academy of Sciences (PNAS), Applied Physics Letters, Europhysics Letters (EPL), Smart Materials and Structures, PLoS one, J Acoustical Society of America, IEEE Transactions on Haptics, and others.
Editor of two books on virtual reality, including *Human Walking in Virtual Reality*, Springer Series in Engineering, 2013.
Google Faculty Research Award, 2016.
Two best paper awards at IEEE Haptics Symposium (2010 and 2016). One best paper runner up (2016).
Best paper finalist at EuroHaptics (in 2014) and IEEE Haptics Symposium (four times)
Lead DSP designer and programmer for multiple award winning music software *Ableton Live* (millions of users).
Exhibition, performance, and outreach at major international venues including Centre Pompidou, SIGGRAPH Emerging Technologies, Ars Electronica, La Gaité Lyrique, Design Biennale St. Etienne, Philadelphia Science Festival, and others.
Radio Host, *The Unknown Territories*, a weekly program on contemporary science and music, broadcast via KCSB FM and online.

Professional Service Highlights

Lead Guest Editor, IEEE Transactions on Haptics, Special Issue on Active Touch Sensing (2015).
Program Chair, EuroHaptics Conference, the primary haptics conference in Europe (2016).
Local Arrangements Chair, IEEE Haptics Symposium, the primary haptics conference in the USA (2016).
Organizer of the IEEE/RSJ IROS 2014 Workshop on Active Touch Sensing in Robots and Animals, and the ACM CHI 2013 Course on Walking in VR, and several other academic workshops and symposia.

Teaching and Mentoring

Advisor to four current PhD students. The first will defend in 2016. Mentor to multiple graduate and undergraduate students.
Teaching experience in linear and nonlinear control systems, haptics, human-computer interaction, interactive arts, AI, robotics.

Publications

Books

Y. Visell, M. Hartmann, V. Hayward, N. Lepora (guest editors), Active Touch Sensing in Humans, Robots, and Other Animals. IEEE Transactions on Haptics, 2016.

F. Steinecke, Y. Visell, J. Campos, A. Lecuyer (eds.), Human Walking in Virtual Environments: Perception, Technology, and Applications. Springer Verlag Series in Engineering (January, 2013). ISBN: 978-1-4419-8431-9.

F. Fontana*, Y. Visell* (eds.), Walking with the Senses: Non-visual perceptual techniques for walking in simulated environments. Logos Verlag, ISBN: 978-3-8325-2967-3, 2012. (* Equal contrib.)

Journal Articles

Y. Shao, V. Hayward, Y. Visell, Spatial Patterns of Cutaneous Vibration During Whole-Hand Haptic Interaction. Proc Nat Acad Sci, March, 2016.

B. Li, Y. Gao, A. K. Fontecchio, Y. Visell, Soft capacitive tactile sensing arrays fabricated via direct filament casting. Smart Materials and Structures, To Appear, 2016.

B. Li, A. K. Fontecchio, Y. Visell, Mutual capacitance of liquid conductors in deformable tactile sensing arrays. Applied Physics Letters 108, 2016.

M. Janko, R. Primerano, Y. Visell, On Frictional Forces Between the Finger and a Textured Surface During Active Touch. IEEE Transactions on Haptics, 2016.

Y. Visell, Fast, physically accurate rendering of multimodal signatures of distributed fracture in heterogeneous materials. IEEE Transactions on Computer Graphics and Visualization, 2015.

Y. Visell, G. Millet, Fracture in Disordered Heterogeneous Materials as a Stochastic Process. (Submitted) arXiv:1408.5303 (cond-mat.stat.mech).

B. Giordano, Y. Visell, H.-Y. Yao, V. Hayward, J. Cooperstock, S. McAdams, Identification Of Walked-Upon Materials In Auditory, Kinesthetic, Haptic And Audio-Haptic Conditions. J Acoustical Society of America 131 (5), 2012.

Y. Visell, Frictional stick-slip oscillation as a first passage problem. EPL Europhysics Letters 95 (6), 2011.

Y. Visell, B. Giordano, G. Millet, J. Cooperstock, Vibration Influences Haptic Perception of Surface Compliance During Walking. PLoS ONE 6 (3), March, 2011.

G. Lemaitre, O. Houix, P. Susini, Y. Visell, K. Franinovic, Feelings elicited by auditory feedback from a computationally augmented artifact. IEEE Transactions on Affective Computing, 2012.

Y. Visell, A. Law, J. Cooperstock, Touch is Everywhere: Floor Surfaces as Ambient Haptic Interfaces. IEEE Transactions on Haptics, 2 (3), July-September, 2009. (Issue Cover Image)

Y. Visell, F. Fontana, B. Giordano, R. Nohrdahl, S. Serafin, R. Bresin, Sound Design and Perception in Walking Interactions. Int J Human Computer Interaction Studies, 67 (11), Elsevier, 2009.

Y. Visell, Tactile Sensory Substitution: Models for Enaction in HCI. Interacting with Computers, 21 (1-2), Elsevier, 2009.

G. Lemaitre, O. Hioux, Y. Visell, K. Franinovic, N. Misdariis, P. Susini, Toward the Design and Evaluation of Continuous Sound in Tangible Interfaces. Int J Human Computer Interaction Studies, 67 (11), Elsevier, 2009.

Y. Visell, Spontaneous Organization, Pattern Models, and Music. Organised Sound 9(2), Cambridge Univ. Press, 2004.

Peer Reviewed Conference Publications (Selected)

Y. Shao, Y. Visell, Learning Constituent Parts of Touch Stimuli from Whole Hand Vibrations. Proc. IEEE Haptics Symposium, 2016. **Best Paper Award,** Runner Up.

M. Chartier, N. Thomas, Y. Shao, Y. Visell, Toward a Wearable Tactile Sensory Amplification Device: Transfer Characteristics and Optimization. Proc. IEEE Haptics Symposium, 2016. **Best Paper Award,** Work-in-Progress Category.

R. Lerch, H. Cui, S. Patwardhan, Y. Visell, C. Sims, Exploring Haptic Working Memory as a Capacity Limited Channel. Proc. IEEE Haptics Symposium, 2016. **Best Paper Award,** Finalist.

B. Li, Y. Visell, Design, Analysis, and Fabrication Methods for Highly Compliant Tactile Sensing Arrays. Proc. IEEE Haptics Symposium, Work-in-Progress, 2016.

H. Cui and Y. Visell, Linear and Nonlinear Subspace Analysis of Hand Movements During Grasping. Proc. of IEEE Engineering and Biology Conference (EMBC), 2014.

H. Nagano, Y. Visell, S. Okamoto, On the Effect of Vibration on Slip Perception During Bare Finger Contact. Proc. of Eurohaptics Conference, 2014.

M. Janko, R. Primerano, Y. Visell, Scale dependence of force patterns during the scanning of a surface by a bare finger. Proc. of Eurohaptics Conference, 2014. **Best Paper Award,** Finalist (Rank 4 of 200+)

Y. Visell, K. Duraikkannan, V. Hayward, A Device and Method for Multimodal Haptic Rendering of Volumetric Stiffness. Proc. of Eurohaptics Conference, 2014.

J. Kahn, D. Peretz, J. Tangorra, Y. Visell, Touch Sensing in a Robotic Fish Fin. Living Machines: Intl Conf on Biomimetic and Biohybrid Systems, 2013.

Y. Visell, V. Hayward, An asymmetry in force perception contingent on motion reversal. Proc. of the IEEE World Haptics Conference, 2013.

A. Berrezag, Y. Visell, V. Hayward, Compressibility and Crushability Reproduction Through an Amorphous Haptic Interface. Proceedings of the Eurohaptics Symposium, 2012.

Y. Visell, J. Cooperstock, Design of a Vibrotactile Display via a Rigid Surface. Proceedings of the IEEE Haptics Symposium, 2010. **Best Paper Award.**

Y. Visell, S. Smith, A. Law, R. Rajalingham, J. Cooperstock, Contact Sensing and Interaction Techniques for a Distributed, Multimodal Floor Display. Proceedings of the IEEE Symposium on 3D User Interfaces (3DUI'10), 2010.

Y. Visell, A. Law, S. Smith, J. Ip, J. Cooperstock, Interaction Capture in Immersive Environments via an Intelligent Floor Surface. Proceedings of IEEE Virtual Reality (VR'10), 2010.

R. Rajalingham, Y. Visell, J. Cooperstock, Probabilistic Tracking of Pedestrian Movements from In-floor Force Measurements. Proceedings of the 7th Canadian Conference on Computer and Robot Vision (CRV'10), 2010 (accepted).

A. Law, J. Ip, B. Peck, Y. Visell, P. Kry, J. Cooperstock, A Multimodal Floor for Virtual Environments. ACM SIGGRAPH, Emerging Technologies, 2009.

Y. Visell, A. Law, J. Cooperstock, Toward Iconic Vibrotactile Information Display via Floor Surfaces. Proceedings of World Haptics, 2009.

A. Law, B. Peck, Y. Visell, P. Kry, J. Cooperstock, A Multi-modal Floor-space for Experiencing Material Deformation Underfoot in Virtual Reality. Proc. IEEE Intl. Workshop on Haptic Audio Visual Environments and Games (HAVE'08).

Y. Visell, J. R. Cooperstock, K. Franinovic, B. L. Giordano, S. McAdams, K. Jathal, A. Law, F. Fontana, A Vibrotactile Device for Display of Virtual Ground Materials in Walking. Proceedings of Eurohaptics, 2008.

B. L. Giordano, S. McAdams, Y. Visell, J. R. Cooperstock, H. Yao, V. Hayward, Non-Visual Identification of Walking Grounds. Proceedings of Acoustics'08. J. Acoust. Soc. Am. 123 (5):3412, 2008.

R. Bresin, S. Della Monache, F. Fontana, S. Pappetti, P. Polotti, Y. Visell, Auditory Feedback from Crumpling Sound Synthesis. ACM CHI 2008 Extended Abstracts.

Y. Visell and J. R. Cooperstock, Enabling Gestural Interaction by Means of Tracking Dynamical Systems Models and Assistive Feedback. Proceedings of the IEEE Intl. Conf. on Systems, Man, and Cybernetics (IEEE SMC'07), 2007.

K. Franinovic, Y. Visell, New Musical Interfaces in Context: Sonic Interaction Design in the Urban Setting. Intl. Conf. on New Instruments for Musical Expression (NIME'07), 2007.

Y. Visell, K. Franinovic, Recycled Soundscapes. ACM Designing Interactive Systems (DIS'04), 2004.

Book Chapters

Y. Visell, S. Okamoto, Vibrotactile Sensation and Softness Perception. Chapter in: Multisensory Softness, ed. Massimiliano di Luca. Springer Verlag Series on Touch and Haptic Systems, 2014.

Y. Visell, R. Murray-Smith, S. Brewster, J. Williamson, Continuous Auditory and Tactile Interaction Design. Chapter in: Sonic Interaction Design, eds. K. Franinovic and S. Serafin. MIT Press, 2013.

Y. Visell, F. Steinicke, J. Campos, A. Lecuyer, Introduction: Human Walking in Virtual Environments. Chapter in: F. Steinecke, Y. Visell, J. Campos, A. Lecuyer (eds.), Human Walking in Virtual Environments: Perception, Technology, and Applications. Springer Verlag Series in Engineering, 2013.

Y. Visell, S. Smith, J. Cooperstock, Interaction with Computationally Augmented Floor Surfaces. Chapter in: F. Steinecke, Y. Visell, J. Campos, A. Lecuyer (eds.), Human Walking in Virtual Environments: Perception, Technology, and Applications. Springer Verlag Series in Engineering, 2013.

M. Marchal, G. Cirio, Y. Visell, F. Fontana, S. Serafin, J. Cooperstock, A. Lecuyer, Multimodal Rendering. Chapter in: F. Steinecke, Y. Visell, J. Campos, A. Lecuyer (eds.), Human Walking in Virtual Environments: Perception, Technology, and Applications. Springer Verlag Series in Engineering, 2013.

Y. Visell, S. Smith, J. Cooperstock, Distributed human-computer interaction with augmented floor surfaces. Chapter in: Walking with the Senses, eds. Y. Visell and F. Fontana. Logos Verlag, 2012.

Y. Visell, R. Rajalingham, J. Cooperstock, A review of nonvisual signatures of human walking with applications to person tracking in augmented environments. Chapter in: Walking with the Senses, eds. Y. Visell and F. Fontana. Logos Verlag, 2012.

G. Cirio, Y. Visell, and M. Marchal, Multisensory and Haptic Rendering of Complex Virtual Grounds. Chapter in: Walking with the Senses, eds. Y. Visell and F. Fontana. Logos Verlag, 2012.

V. Hayward, Y. Visell, S. Serafin, F. Fontana, M. Civolani, Novel haptic displays for walking interactions. Chapter in:Walking with the Senses, eds. Y. Visell and F. Fontana. Logos Verlag, 2012.

Patents

B. Li, Y. Visell, Stretchable Tactile Sensing Array. (Drexel University), USPTO (Pending).

Y. Visell, K. Franinovic, A. Law, J. Cooperstock (McGill University), Floor-Based Haptic Communication System. USPTO 9041521.

Invited Presentations

Jul 2016 IEEE Image, Video, and Multidimensional Signal Processing (IVMSP) Workshop, Bordeaux, France

Apr 2016 IEEE Haptics Symposium, Transactions on Haptics Special Session, Philadelphia, PA

Jun 2014 Eurohaptics Workshop on Multisensory Softness, Versailles, France

Nov 2013 Psychonomic Society, Tactile Research Group Workshop

Oct 2008 Design Symposium Pecha Kucha, Montreal

Oct 2007 Design Symposium Pecha Kucha, Montreal, 2008

Department Seminars

Oct 2015 University of California, Santa Barbara, Mechanical Engineering Department

Mar 2015 New York University, Department of Mechanical Engineering and Aerospace

Mar 2015 University of California – Santa Barbara, Departments of Media Arts & Technology and Electrical and Computer Engineering

Feb 2015 Princeton University, Department of Mechanical Engineering and Aerospace

Feb 2015 Ohio State University, Department of Mechanical Engineering

Feb 2015 Temple University, Department of Electrical and Computer Engineering

Feb 2015 University of Massachusetts – Amherst, School of Computer Science

Feb 2015 Virginia Polytechnic Institute and State University (Virginia Tech), Mechanical Engineering Department

Nov 2014 University of Pennsylvania, Institute for Research in Cognitive Sciences

Oct 2014 University of Florida, Electrical and Computer Engineering Department

Oct 2013 Drexel University, School of Biomedical Engineering

Apr 2012 Ecole des Beaux Arts de Strasbourg

Dec 2010 NTT Research Laboratories, Atsugi, Japan

Jul 2009 University of Verona, Department of Computer Science

Mar 2008 McGill University, CIRMMT Workshop on Multimodal Integration

Mar 2008 McGill University, REPARTI Network Workshop

Nov 2008 McGill University, Workshop on Multimodal Influences on Perceived Self Motion

Jun 2007 University of Zurich, AI Laboratory

Jul 2007 Ecole Polytechnique Federale de Lausanne (EPFL), BIRG Laboratory

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E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.